

REMARKS/ARGUMENTS

By this Amendment, claim 21 has been amended to include the limitations of dependent claims 31, 32 and 34 therein and to more particularly point out the patentably novel arrangement of structural elements of the cooling equipment. Dependent claims 31, 32 and 34 have been canceled and the remaining claims are in the form included in the Amendment accompanying the Request for Continued Examination.

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

Since claim 21 is the only independent claim presented for consideration herein, the patentable novelty of this claim will be discussed first.

The rejection applicable to independent claim 21, as amended herein, corresponds to the rejection advanced against claims 31-34 in the Office Action (see paragraph 9 thereof). Specifically, these latter claims were rejected "under 35 U.S.C. 103 (a) as being unpatentable over Rode (US Patent No. 6,044,648) and Roslonski (US Patent No. 3,595,030) as applied to claim 21, and further in view of Walker et al. (US Patent No. 5,976,871)."

Applicant submits that the rejection advanced above is improper and should be withdrawn.

The examiner acknowledges that Rode fails to teach a number of significant limitations specified in claim 21, even prior to amendment herein. Specifically, the examiner acknowledges that Rode fails to disclose "a porous buffer material arranged in the intermediate space; the cooling agent supply line introducing the cooling agent into the porous buffer material of the intermediate space, the porous buffer material being adapted to temporarily receive the cooling agent; the cooling agent being transferred through the inner wall with the inner wall being permeable; or the ability of the cooling equipment to function without a cooling agent lake forming on a bottom of the cooling space.

As is pointed out in detail *infra*, the secondary patent to Roslonski fails to cure the defects of the Rode patent, even assuming that the references are properly combinable. Claim 21, as amended herein, specifies the following limitation:

“a cooling agent supply line communicating with and emptying into the intermediate space for introducing a cooling agent in liquid form into the porous buffer material of the intermediate space for subsequent transfer of the cooling agent into the cooling space through the inner wall, wherein no cooling agent lake forms on a bottom of the cooling space.”

Rode does not teach the structural arrangement of “a cooling agent supply line communicating with and emptying into the intermediate space.” Rode also does not teach that the cooling agent is “in liquid form.” Rode also fails to teach that the cooling agent passes through a porous buffer material prior to passing through the inner wall and into the cooling space.

Roslonski does not cure the defects in the Rode teaching. Specifically, Roslonski does not have “a cooling agent supply line communicating with and emptying into the intermediate space [which includes the buffer material].” In Roslonski, the cooling agent supply line empties directly into cooling compartment 22; thus failing to teach an important feature of applicant’s invention. The cooling agent in the Roslonski device actually enters the insulating material between enclosures 20 and 30 after it has provided its cooling function in chamber 22. This is the exact opposite of the arrangement specified in independent claim 21. In Roslonski, passages 36 at the left end (distal end) of enclosure 20 are actually exit passages from cooling chamber 22; not entrances into the cooling chamber as is required in independent claim 21.

Even if one were to consider drawer 44 in container 40 of Roslonski to be the claimed cooling space, which applicant submits would be an improper construction of that reference, the secondary reference still fails to teach the above quoted limitation with respect to the cooling agent supply line. In Roslonski, the cooling agent supply line is in communication with and empties directly into cooling chamber 22; not into any buffer material between an outer wall and

an inner pervious wall of a cooling chamber as specified in claim 21. In fact, if one tried to stretch the teaching in Roslonski to construe the wall defining container 40 to be the claimed inner wall and the outer wall of enclosure 30 as being the claimed outer wall, there would be no buffer material between those two walls. Moreover, such a strained construction of Roslonski is submitted to be manifestly improper since the wall defining container 40 is part of a completely separate structure from the enclosure 30.

Based upon the above discussion it should be apparent that claim 21 sets forth patentably novel subject matter over the applied references.

Moreover, the deficiencies of the applied references do not end here. Although the tertiary reference to Walker does disclose a cytogenetic chamber including a protective bell, the teachings in this latter patent are deficient in two respects.

First, claim 21 as amended herein specifies that the protective bell is removable. There is absolutely no suggestion that the protective enclosure 23 (corresponding to the claimed protective bell) is capable of being removed. In fact, from a review of Walker it appears that the enclosure 23 is a permanent, non-removable part of the structure.

Second, claim 21 specifies that the removable protective bell includes a cold gas outlet at its lower end. None of the cited references, including Walker, disclose such an arrangement.

The inclusion and location of cold gas outlet 9 as specified in claim 21 are important in applicants' construction since that arrangement results in a large temperature gradient at the level of the cold gas outlet, which counteracts a misting over (fogging) of the inner walls of the protective bell 4 (cf. [0041]).

The examiner appears to be taking the position that conduits 48 on the bottom of the enclosure 30 in the Roslonski patent, through which cooling agent and cold gas escape after exiting the cooling space 22, correspond to the claimed cold gas outlet 9 (cf. page 9 of the office action).

However, the conduits 48 of Roslonski have a completely different technical function compared with the cold gas outlet 9 of the present invention. The function of the conduits 48 in the Roslonski patent is to direct the refrigerant, after it has provided a cooling function for a bottle of wine in cooling chamber 22, into enclosure 45 to cool drinking glasses.

In distinction, and as discussed above, the cold gas outlet 9 of the present invention has the technical function of generating a large temperature gradient at the level of the cold gas outlet 9 thereby counteracting a misting over (fogging) of the inner walls of the protective bell.

In view of the above remarks applicants submit that independent claim 21 sets forth patentably novel subject matter and an indication to that effect is respectfully requested.

All of the remaining claims are either directly or indirectly dependent upon claim 21 and therefore are submitted to be patentable for at least the reasons set forth above in connection with claim 21. In addition, a number of the dependent claims set forth further patentably novel features of this invention.

Claim 24 is dependent upon claim 21 and specifies that the inner wall is substantially grid-shaped. This feature in combination with the features specified in parent claim 21 is neither shown nor suggested in the prior art of record and therefore claim 24 is submitted to be patentable thereover.

Claim 28 is dependent upon claim 27 and specifies the arrangement of the cooling supply line having a cooling agent distributor extending along the circumferential edge of the cooling space to introduce the coolant in a distributed manner into the intermediate space. This feature in combination with the features of the parent claims from which claim 28 depends is neither shown nor suggested in the prior art of record and therefore claim 28 is submitted to be patentable thereover.

Claim 38 is dependent upon claim 36 and specifies that the temperature sensor measures "a cryosample in the cooling space." Thus claim 38 is directed to cooling equipment for a cryosample. This feature in combination with the features of the parent claims from which

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claim 38 depends is neither shown nor suggested in the prior art of record and therefore claim 38 is submitted to be patentable thereover. Moreover, applicants submit that there is no proper basis for combining the teachings in Rode, which relates to a cooling device for cooling biological samples, and the teachings of Roslonski, which relates to a device for chilling wine and wine glasses.

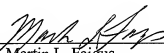
In view of the above amendments and remarks, applicants submit that all of the claims presented for consideration herein set forth patentably novel subject matter and an indication to the effect is respectfully requested.

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No. 03-0075 as necessary to affect
entry and/or ensure consideration of
this submission.

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MLF:grb

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